REMARKS

Undersigned again requests the PTO to change the attorney's docket for this case to the attorney's docket of the firm of undersigned, as requested on the first page of the remarks on the preceding reply. Again, applicants new attorney's docket for this case is **"WEIHRAUCHE=3"**

The Final Official Action of June 14, 2006, has been carefully studied. The claims in the application remain as claims 75, 79-106 and 109-151, and it is again asserted that these claims define patentable subject matter and therefore should be allowed. Favorable reconsideration, entry of the amendments presented above and allowance are respectfully urged.

As regards to the proposed amendments presented above, these are based on original claim 4, the characterization clause of which recited "the injection pressure is set such that the molding polymer mass in the bristle-molding channel has a specific pressure of more than 300 bar ($0.3x10^5$ kPa)." As this subject matter has already been examined, it should not constitute any new issue. Accordingly, amendments presented above should be entered, at least for purposes of appeal.

Attached hereto is a declaration of Georg Spilger, a plastics engineer who has intimate knowledge about the present invention. This declaration points out, among other presentations of fact, that the pressure developed in the bristle forming channel is different from the injection pressure, which relates to the amendments made above in accordance with the original claim 4. This declaration should be entered because it supports applicant's arguments made in the preceding reply, which the PTO has not accepted: such declaration could not have been presented earlier because it was only in the final rejection that the PTO refused to accept applicant's arguments that the pressure utilized according to the present invention far exceed those used in the prior art: on page 3 of the final action, the PTO states:

> The injection pressure needed to fill the elongated cavity would have been within the claimed range in Kutik in view of the teaching of Rosato (page 670-672) so as to properly fill the cavity.

The pressures used according to the present invention are far in excess of the pressures used in the prior art and the pressures needed "so as to properly fill the cavity." The attached declaration establishes this as fact.

Claims 75, 79-106 and 109-151 have been provisionally rejected again on the basis of obviousness-type double patenting over the claims of (so far unexamined) co-

pending application 10/508,182. Although the rejection is again respectfully traversed, it is hereby overcome by the submission herewith of a Terminal Disclaimer.

As such Terminal Disclaimer is executed by undersigned attorney of record, compliance with 37 C.F.R. 3.73(b) is unnecessary.

Withdrawal of the rejection is in order and is respectfully requested.

Claims 75, 79-106, 109-112, 118-127, 135 and 146-151 have all been rejected as obvious under Section 103 from Kutik in view of Rosato. Similarly, all the claims in the application, namely claims 75, 79-106 and 109-151 have been rejected as obvious under Section 103 from Klinkhammer in view of Rosato. Both of these rejections are repeat rejections, and they are both respectfully traversed for the reasons set forth in the reply filed March 22, 2006, respectfully repeated by reference, amplified by applicant's remarks below and the evidence of the attached declaration of Georg Spilger.

Both rejections are based on the allegation that the injection pressure used in the present invention is the conventional injection pressure simply needed to fill the cavity, but **this is absolutely incorrect** and is so proven by the attached declaration of Georg Spilger.

It is indisputable that none of the references explicitly disclose the features of any of applicant's independent claims 75, 106 and/or 151, in particularly the injection pressure as previously claimed (as well as the specific pressure in the bristle-forming channel as previously recited in original claim 4 and now added above into applicant's claims). Rejections are both based on assumptions and extrapolations of Rosato as enumerated below, with the present invention in mind.

1. In both rejection, the first reliance on Rosato takes the following form:

> Rosato teaches the injected material having a high core speed in the center flow (page 249) and a large shearing effect due to wall friction (pages 249, 250) of the mass under distinct longitudinal orientation of polymer molecules (page 244).

Where is a "high-core speed" defined in Rosato on page 249 or elsewhere? Indeed, unlike the present invention, where "high-core speed" is defined and such terminology is used, where in Rosato are the words "high-core speed" even to be found on page 249 or elsewhere in Rosato? The PTO seems to be reading into Rosato what is found in applicant's specification, not in Rosato[1].

[1] Of course, Rosato states what is well known, namely that the core speed is inevitably "faster" than a flow along the surface of the mold cavity, but there is no indication of how fast.

Both rejections then continue with the following conclusion:

> The injected material having a high-core speed in the center flow and a large shearing effect due to wall friction of the mass under distinct longitudinal orientation of the polymer molecule would have been obvious in [the primary reference, Kutik in one case and Klinkhammer in the other] as shown by Rosato in view of the elongated shape of the cavity.

Again, "high-core speed" is not at all defined in Rosato, and also not in Kutik or Klinkhammer. Wall friction always occurs and a shearing effect always occurs, but there is no hint in the prior art of the greater effects produced by high pressures and high core speeds used in the present invention over anything known in the prior art, insofar as is known.

2. The rejections then continue with reliance on different parts of Rosato:

> The injection pressure needed to fill the elongated cavity would have been within the claimed range in [the primary reference, Kutik or Klinkhammer] in view of the teaching of Rosato (page 670-672) so as to properly fill the cavity.

Of course, everyone in the prior art uses an injection pressure needed to fill the cavity, e.g. an elongated cavity, and applicant agrees that it would have been within the ordinary skill of the art to use sufficient pressure in both Kutik and Klinkhammer "so as to properly fill the cavity."

But that is not applicant's invention! Applicant's invention instead uses a much greater injection pressure than that needed to fill the cavity, and there is nothing in Kutik, Klinkhammer and/or Rosato to teach the high pressures used in the present invention.[2]

The prior art, either alone or in any known combination, simply does not show or remotely suggest applicant's high pressures, and this is confirmed in the attached declaration of Georg Spilger who states in his declaration that "the injection pressure [used in the present invention] is, as a fact, much higher than the pressure necessary to fill the cavity, and is correspondingly also much higher than the injection pressure according to the prior art."

In the bottom paragraph on page one of his declaration, Georg Spilger also gives his opinion that the person "skilled in the art would likely and usually use only the maximum pressure to fill the mold cavity," and states as fact that "selecting a greater pressure would be more expensive", and this would be a reason why those skilled in the art would not use the greater pressures called for in the

[2] Indeed, Rosato, so heavily relied upon by the PTO, suggests much lower pressures noting the sentence spanning columns 1 and 2 on page 672 which mentions a "theoretical nozzle pressure" of only 125.80Mpa, this value also being mentioned in the sentence spanning the first and second columns of page 670. This converts to 1,258 bar, well below applicant's minimum of 2,000 bar.

present invention. Engineer Spilger also states as fact that "in order to fill the mold cavity, the injection pressure needs to be only about 300 bar, far less than the injection pressure used in the [present] invention…."

In the top paragraph on page 2 of his declaration, Engineer Spilger states that the present invention "requires an injection pressure far greater than the injection pressure of about 300 bar necessary to fill the mold cavity, …."

The factual statements made by Georg Spilger must be accepted by the PTO as evidence. The opinions given by Mr. Spilger must also be given weight as the opinions of an expert in the present field as one who received his degree in the "science of plastic materials" and who has worked in the field for 25 years.

To summarize, both rejections state that it would have been obvious to use a sufficient pressure to fill the cavity. This is not denied, but it entirely misses the present invention which uses pressures far in excess of those pressures necessary to fill the cavity. What applicant did would not have been obvious at the time the present invention was made from a consideration of the references relied on, either singly or together in any combination, and indeed was not obvious.

Both rejections should be withdrawn and such is respectfully requested.

With respect to the commentary in the final action under the heading "Response to Arguments" appearing at pages 5-7, the following additional remarks are provided.

The PTO states that a means for generating an injection pressure of at least 2,000 bar is not new; and that if it were new, the disclosure would be incomplete. This is not so! Merely because something is not new does not make it obvious for inclusion in any particular apparatus. There is no evidence that any of the applied prior art provided any such means or that they would want to provide such means due to the increased cost of doing so.

The PTO relies on *In re Swinehart*, 169 USPQ 226 (CCPA 1971). In this case, the rejection was based on Section 112, and was reversed by the court. The rejection of the PTO was that language in the claim relied upon was "functional." The court held that the language of the claim had to be given full effect.

The points raised about applicant's apparatus claims of course do not relate to applicant's methods claims.

As regards the disclosure of Rosato in paragraph 10 of the final action, the PTO takes the position that the disclosure of 125.8 Mpa "is just the amount lost" and would be less than the

amount applied to fill the cavity. This appears to be speculation, and it is certainly speculation to assume (without any supporting evidence) that the injection pressure would have been as great as 2,000 bar. Figs. 7-52 notes that "peak hydraulic pressure at transfer" was 125.8 Mpa (1,258 bar). Fig. 7.53 shows that this same pressure is the starting pressure.

The fact of the matter is that no one skilled in the art would use a greater pressure than the pressure necessary to fill the cavity, as the use of greater pressure would simply increase the cost with no apparent advantage. Applicant has flown in the face of conventional wisdom and has thus achieved an improved product. What applicant did and what is claimed is the very antiphrasis of obviousness.

Favorable reconsideration, entry of the amendments made above and of the attached declaration and terminal disclaimer, and allowance are all respectfully requested.

Respectfully submitted,

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